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March 10, 2022

In reply, reference letter number: G-CAO-22-100393

U.S. Department of Transportation
Docket Operations
West Building Ground Floor, Room W12-140
1200 New Jersey Avenue, SE.
Washington, DC 20590

Subject: Request for Exemption from Section 25.809(a) of Title 14 Code of Federal Regulations, Overwing Emergency Exits Viewing Means

Enclosure(s): 1) Petition for Permanent Exemption – Overwing Emergency Exits – Means for Viewing Likely Areas of Evacuee Ground Contact (25.809(a))

Reference(s): 1) Regulatory Docket No. FAA-2015-3595, Exemption No. 13504, dated January 4, 2016, Exemption from Section 25.809(a) of Title 14, Code of Federal Regulations
2) Regulatory Docket No. FAA-2020-0053, Exemption No. 18499, dated March 5, 2020, Exemption from Section 25.809(a) of Title 14, Code of Federal Regulations

ODA Project Number(s): AT-01-2015-0017

Dear Sirs:

In accordance with 14 CFR Part 11, Gulfstream Aerospace Corporation requests consideration of the enclosed petition for exemption. This petition is being submitted to relieve the Gulfstream GVIII-G800 model aircraft from full compliance with 14 CFR 25.809(a) at amendment 25-116, Emergency Exit Arrangement, for the requirement to provide a means to view the areas of evacuee ground contact prior to opening the overwing exit window. Petition for Permanent Exemption – Overwing Emergency Exits – Means for Viewing Likely Areas of Evacuee Ground Contact (25.809(a)) is provided in support of this request (Enclosure 1).

Gulfstream believes that good cause exists why action on this petition should not be delayed by publication and comment procedures. We request that the 120-day FAA review and processing period specified in 14 CFR 11.63(d) be reduced to 60 days. Gulfstream feels this request is appropriate as it does not set a precedent, and because the relief requested herein is identical to exemptions granted previously (References 1-2).

Should you have any further questions, or require any additional information, please contact CAO Airworthiness Engineering Specialist Andrea Burkhardt at

Andrea.Burkhardt@gulfstream.com or (912) 251-1712 (office), or TC Program Administrator Tom Strohmayer at Thomas.Strohmayer@gulfstream.com, (912) 395-7778 (office) or (912) 433-6002 (mobile).

Respectfully,

A handwritten signature in black ink that reads "Catherine M. Downen". The script is cursive and fluid.

Catherine Downen
ODA Enterprise Program Administrator - TC
Gulfstream Aerospace Corporation

Petition for Permanent Exemption
Gulfstream Aerospace Corporation
Overwing Emergency Exits –
Means for Viewing Likely Areas of Evacuee Ground Contact (25.809(a))
Model GVIII-G800

Relief from Section 14 CFR Part 25.809(a) Amendment 25-116

Gulfstream Aerospace Corporation (Gulfstream) of Savannah, Georgia has submitted application to the FAA's Atlanta Aircraft Certification office for amended type certification of a GVI derivative product of similar design and manufacture to be known as the Gulfstream model GVIII-G800. Project number AT-01-2015-0017 has been assigned to these efforts.

14 CFR 25.809(a), Amendment 25-116 states that each emergency exit, including each flight crew emergency exit, must be a movable door or hatch in the external walls of the fuselage allowing an unobstructed opening to the outside. In addition, each emergency exit must have means to permit viewing of the conditions outside the exit when the exit is closed. The viewing means may be on or adjacent to the exit provided no obstructions exist between the exit and the viewing means. Means must also be provided to permit viewing of the likely areas of evacuee ground contact. The likely areas of evacuee ground contact must be viewable during all lighting conditions with the landing gear extended as well as in all conditions of landing gear collapse.

The GVIII-G800 emergency exits consist of the Type I Main Entry Door and two pairs of overwing emergency exits which will be demonstrated to provide equivalent or better egress flow rate as a single Type III overwing exit. These overwing emergency exits are identical in size and shape to those certified on the GVI per ELOS TC8700AT-T-C-1. The GVIII-G800 aircraft will have a maximum seating capacity of 19 passengers and the overwing exits are centrally located in the passenger cabin. The overwing exits house large oval windows which provide a full panoramic view of the wing surface as well as the ground area just beyond the point of occupant first contact.

Partial relief is being sought for the GVIII-G800 aircraft, from the requirements of 14 CFR 25.809(a) for the overwing exits since this outside viewing means does not permit viewing of the likely area of the evacuee ground contact prior to exit opening. Relief is necessary since literal compliance with the rule, would, at a minimum, require extensive design changes to the airplane (such as movement of the exits or complete redesign of the exit configuration) to provide the view of the exact ground location as currently prescribed. Furthermore, due to the height of the wing versus the height of the doors, a truly compliant configuration may ultimately not be physically obtainable.

In accordance with the provisions of 14 CFR 11.81, Gulfstream requests an exemption to 14 CFR 25.809(a) for the GVIII-G800 with regards to viewing of the ground contact area under all lighting and landing gear conditions for overwing emergency exits.

The GVIII-G800 aircraft will nonetheless comply with anticipated future harmonized requirements as indicated in the EASA CRD to MPA 2010-11 and now incorporated in EASA CS 25.809(a) at Amendment 12 and specific conditions imposed by the authorities to allow such an exemption.

Supportive Information

Notice of Proposed Rulemaking (Notice No. 96-9) was published in the Federal Register on July 24, 1996 (61 FR 38552). The notice proposed to upgrade several cabin safety requirements including outside viewing means. The FAA's response to the commenters was that the impact of 14 CFR 25.809(a) went beyond what was envisioned in the rulemaking process for the overwing exits on some airplanes.

The intent of the requirement was to enable a person to ascertain whether to open an exit, and whether it was safe to evacuate through the exit, based on the assessment of the outside conditions. To the extent that the means used for the determination of the former did not also allow an assessment of the ground, it was agreed that an additional viewing means might be necessary, and that the additional means might be somewhat remote from the exit. Therefore, the amendment was reworded to allow for dual purpose of the viewing means, and to distinguish between the two. The intent of the rule was that it was not necessary for a person to be able to view the ground contact point while in position to open an overwing exit. The rule itself refers to the ground contact view separately from the viewing conditions outside the exit, but the intent of the rule was not clearly expressed in the rule language. The FAA worked with the European Aviation Safety Agency (EASA) to improve the rule language and EASA incorporated the improved language in their Certification Specification (CS) at Amendment 25/12, dated July 13, 2012. CS 25.809(a)(3) states:

For non-over-wing passenger emergency exits, a means must also be provided to permit viewing of the likely areas of evacuee ground contact when the exit is closed with the landing gears extended or in any condition of collapse. Furthermore, the likely areas of evacuee ground contact must be viewable with the exit closed during all ambient lighting conditions when all landing gears are extended

Factors Supporting the Petition

Based on the design and location of the elliptical windows, Gulfstream believes that the ability to perform a fully effective visual assessment of outside aircraft conditions and evacuation route with the overwing exits closed is provided. The arrangement of the large elliptical windows at the overwing exits provides a field of view of approximately 140°. A view of the full surface of the wing as well as the ground area surrounding the wing, including areas just feet from the location of likely occupant ground contact is provided. With this large panoramic view, an occupant can directly see the wing surface to ensure no hazards are present, but will also be provided a view of enough of the ground area to make a logical assessment as to the conditions at the point of contact prior to opening the exit in all lighting conditions.

Once the evacuee steps onto the surface of the wing, they will then be able to follow the appropriate escape route and view the ground where they would likely make contact to confirm no hazards exist.

Evacuees will be capable of viewing the escape route and ground during all lighting conditions. The exterior egress lighting is integral to the emergency lighting system.

Effect of the Exemption on Safety

Granting this exemption would not adversely affect safety, because:

- a) As stated under the sections titled Summary and Background of the 14 CFR Final Rule, the objective was not to address a known safety issue, but to update the regulation to catch-up with industry state-of-the-art and design practices.
- b) The GVIII-G800 model aircraft design is consistent with industry state-of-the-art and design practices
- c) The GVIII-G800 model aircraft will comply with anticipated future harmonized requirements as written in the EASA CRD to NPA 2010-11 and now incorporated in EASA CS 25.809(a) at Amendment 12.

Issue of Public Interest

Gulfstream Aerospace Corporation designs, develops, manufactures, markets and services the world's most technologically advanced business jet aircraft to an international market. Gulfstream's leadership position in the global business jet market is due to the efforts of its nearly ten thousand employees in the manufacturing plants, completion centers, and service centers across North America. The corporation utilizes numerous products, such as avionics and environmental control systems, from scores of suppliers located throughout the United States. Gulfstream competes for new business all over the world.

Granting this exemption would benefit the public as a whole, because it:

- a. Minimizes significant cost impacts and avoids investing time and efforts to develop a design that would meet some aspects of the present regulation which will be changed in the future.
- b. Allows the Gulfstream GVIII-G800 model design to meet EASA and FAA anticipated future harmonized regulation preventing competitive disadvantage due to additional design/manufacturing complexity and increased weight.
- c. Avoids additional operation costs associated with:
 - i. Maintenance/spare parts for a more complex viewing system;
 - ii. Fuel consumption/emissions produced by additional weight of such system.

Operation Outside the United States

The European Aviation Safety Agency (EASA) Certification Standard (CS) 25.809(a) is not currently harmonized with 14 CFR 25.809(a).

Regardless of EASA requirements, per 14 CFR 11.81(h), Gulfstream requests consideration be given to extending this exemption for operation outside of the United States. Gulfstream aircraft are routinely registered and operated outside of the United States and projections are the same for the Model GVIII-

G800. Granting this extension of privileges will allow for operations based within foreign countries, having bilateral agreements with the United States accepting FAA 14 CFR Part 25 as their airworthiness standard for transport category aircraft. Gulfstream believes that limiting this exemption to use within the United States would put unfair restrictions on the marketability of this aircraft.

Conclusion

Gulfstream believes that the GVIII-G800 model aircraft design provides a means for safe and effective assessment of outside conditions and hazards prior to opening the overwing emergency exits and provides a level of passenger safety consistent with the current Part 25 regulations. Additionally, after exiting through the overwing emergency exits a viewing of likely ground contact area can be made prior to departing the aircraft. It is proposed that the above arguments favor a partial exemption from 14 CFR 25.809(a) for the Model GVIII-G800, and that the issuance of an exemption is in the public interest.